

AMENDMENTS TO THE DRAWINGS:

A Replacement Formal Drawing for Figure 2A(d) has been filed concurrently.

REMARKS

In view of the above amendments and following remarks, reconsideration and further examination are requested.

A replacement formal drawing is provided for Figure 2A(d) which differs from this figure as originally filed by identifying --R' portion-- instead of "R portion".

The specification and abstract have been reviewed and revised to make editorial changes thereto and generally improve the form thereof, and a substitute specification and abstract are provided. No new matter has been added by the substitute specification and abstract.

Claims 1-7 have been cancelled and claims 8-27 have been added. New claims 8-27 have been drafted taking into account the 35 U.S.C. § 112, second paragraph, issues raised by the Examiner, are believed to be free of these issues, and are otherwise believed to be in compliance with 35 U.S.C. § 112, second paragraph.

With regard to the new claims, claims 8, 9, 13, 14 and 12 correspond to former claims 1-4 and 7, respectively. Accordingly, because claims 1-4 and 7 were indicated to be allowable once amended to overcome the 35 U.S.C. § 112, second paragraph, rejection, it is respectfully submitted that claims 8, 9 and 12-14 are allowable since these claims have been drafted so as to address the 35 U.S.C. § 112, second paragraph, rejection as expressed above. Thus, claims 8-17 are allowable.

New claim 18 basically corresponds to a combination of former claims 5 and 6, and accordingly, the rejection of claims 5 and 6 will be discussed as it pertains to claim 18. Claims 5 and 6 were rejected under 35 U.S.C. § 102(a) as being anticipated by Kirchoff et al. This rejection is respectfully traversed, and Kirchoff et al. is not applicable with regard to newly added claims 18 for the following reasons.

The instant invention pertains to a method of forming a pipe from a workpiece having a hole therein. During an initial forming operation, the workpiece is formed into a pipe member having a required radius at a portion where the hole is located, and then the pipe member is rolled such that other portions of the pipe member are made to have a radius coinciding with the radius at the portion where the hole is located. During this subsequent operation, no bending action is applied to the portion where the hole is located.

Former claim 5 is believed to adequately recite the inventive apparatus used to form the pipe as described above. Specifically, this claim requires a control unit for controlling actuators such that **in a fine forming step, no bending action is applied to the hole portion, and the plate is rolled by pressing with upper and lower rolls so that at portions other than the hole portion, the pipe radius coincides with that of the hole portion.**

Kirchoff et al. does not teach or suggest an apparatus including a control unit for controlling actuators of rolls in the manner as recited by former claim 5. Specifically, Kirchoff et al. is not concerned with forming a workpiece having a hole therein into a pipe, and thus cannot teach the control unit as recited in claim 5. The Examiner recognizes that Kirchoff et al. does not specifically pertain to forming into a pipe a workpiece having a hole therein, but expressed that claim 5 is nonetheless anticipated by Kirchoff et al. since this claim sets forth no means for recognizing the “hole portion” and tying this to the computer operated machine, whereby Kirchoff et al.’s roll bender is capable of operating on sheet material with holes.

It is not disputed that the machine of Kirchoff et al. is capable of forming into a pipe a workpiece having a hole therein; however, claim 5 requires more than this. Specifically, as alluded to above, claim 5 requires that the apparatus includes a control unit for controlling operation of the actuators such that after a rough forming step, and during a fine forming step, a portion where the hole is located is not further shaped. Thus, even though Kirchoff et al. can be controlled to form into a pipe a workpiece having a hole therein, there is nothing in Kirchoff et al. that would require the control unit to control actuators of the rolls such that during a first forming operation, at a portion where the hole is located, the workpiece is formed into a desired radius, and then during a subsequent forming operation this portion is not further shaped. Thus, claim 5 is not anticipated by Kirchoff et al.

Irrespective of the above, new claim 18, which generally corresponds to former claim 5, has been drafted in an attempt to more clearly establish the relationship between the control unit, the hole and the actuators. In this regard, claim 18 recites

**a control unit for controlling said...actuators based
on a position of a hole in a workpiece...**


Because Kirchoff et al. is not concerned with forming into a pipe a workpiece having a hole therein, Kirchoff et al. does not disclose or suggest that the control unit thereof is to control actuators based on a position of a hole in a workpiece, whereby claim 18 is not anticipated by Kirchoff et al. Thus, claims 18-27 are allowable over Kirchoff et al.

In view of the above amendments and remarks, it is respectfully submitted that the present application is in condition for allowance and an early Notice of Allowance is earnestly solicited.

If after reviewing this Amendment, the Examiner believes that any issues remain which must be resolved before the application can be passed to issue, the Examiner is invited to contact the Applicant's undersigned representative by telephone to resolve such issues.

Respectfully submitted,

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